IV

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,792	06/20/2001	Basanth Jagannathan	FIS920000402US1	4506

30743 7590 04/07/2003

WHITHAM, CURTIS & CHRISTOFFERSON, P.C.
11491 SUNSET HILLS ROAD
SUITE 340
RESTON, VA 20190

EXAMINER	
LATTIN, CHRISTOPHER W	
ART UNIT	PAPER NUMBER
2812	

DATE MAILED: 04/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/885,792	Applicant(s) JAGANNATHAN ET AL.	
	Examiner Christopher W Lattin	Art Unit 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) *1-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 13, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chantre et al. (U.S. Patent 6,177,717) in view of Racanelli (U.S. Patent 6,410,975, previously cited by applicant).

Chantre et al. teach a transistor that has a collector region 60, a SiGe base 81, an emitter stack overlying the collector region, said emitter stack including an emitter opening filled with T-shaped polysilicon 111, said T-shaped polysilicon overlying nitride regions 10 included in said stack, SiGe extrinsic base regions (see Figure 6) arranged on respective sides of said emitter stack, the extrinsic base regions aligned with the polysilicon layer 111, but not directly with the emitter opening contacts, and contacts, but fails to teach that the extrinsic base regions are *directly* aligned with the polysilicon layer. Racanelli teaches a similar bipolar device with extrinsic base regions directly aligned with the polysilicon emitter layer in order to minimize the separation distance between the intrinsic and extrinsic regions. See Racanelli column 2 lines 2-40. It would have been obvious to one skilled in the art at the time of the invention to align the extrinsic base regions directly to the emitter stack in the invention of Chantre et al. in

order to minimize the separation distance between the intrinsic and extrinsic regions as taught by Racanelli.

Claims 13, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chantre et al. (U.S. Patent 6,177,717) in view of Racanelli (U.S. Patent 6,410,975, previously cited by applicant) as applied supra and further in view of the admitted prior art.

Chantre et al. are applied supra and teach all of the limitations of the device and appear to illustrate a longer extrinsic base region and a shorter extrinsic base region. However, it is not clear if a contact is formed on the longer extrinsic base region. The admitted prior art relates a well-known transistor that has a base contact formed on the longer extrinsic base region to form an electrical connection. It therefore would have been obvious to one skilled in the art at the time of the invention to have an electrical contact formed on the longer extrinsic base region.

Response to Arguments

Applicant's arguments with respect to the limitation in claims 13-16 of direct alignment have been considered but are moot in view of the new ground(s) of rejection.

Applicant's argument with respect to a SiGe base region is not found persuasive. Applicant argues that Chantre et al. teach a multilayered SiGe base, while the presently claimed method is drawn to a single layer. The claims, which employ "comprising"

language, are not so limited to a single layer. Chantre et al. do teach a SiGe base as required by the claims.

Applicant's argument with respect to a multilayered emitter including oxide, nitride and TEOS layers is not found persuasive. The claim language does not limit the device to these layers. The claims do recite an emitter stack including an emitter opening filled with T-shaped polysilicon, said T-shaped polysilicon overlying nitride regions included in said stack, which is taught by Chantre et al. in column 5, lines 62-65.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Lattin whose telephone number is (703) 305-3017. The examiner can normally be reached Monday through Friday from 8:00 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling, can be reached at (703) 308-3325. The fax number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

John F. Niebling
Supervisory Patent Examiner
Technology Center 2800

CWL
April 3, 2003